CLAIMS

1.   A signal processing apparatus which processes a signal outputted from an image pickup element having filters arranged to use plural kinds of colors, comprising:

interpolation means for generating a plurality of color signals for each pixel position of the image pickup element by interpolation based on signals of pixels which surround said each pixel position of the image pickup element;

suppression means for suppressing the plurality of color signals generated by said interpolation means, if a level of a luminance signal is not lower than a first predetermined level and/or is lower than a second predetermined level; and

color-difference matrix means for generating color-difference signals from the plurality of color signals suppressed by said suppression means.

2.   A signal processing apparatus according to claim 1, further comprising gamma correction means provided between said suppression means and said color-difference matrix means, for performing gamma correction on the plurality of color signals outputted from said suppression means.

3.   A signal processing apparatus according to claim 1, further comprising luminance signal correcting means for

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correcting the luminance signal on the basis of the plurality of color signals suppressed by said suppression means.

4.   A signal processing apparatus according to claim 3, wherein said luminance signal correcting means corrects the luminance signal before the luminance signal is gamma-corrected.

5.   A signal processing apparatus which processes a signal outputted from an image pickup element having complementary color filters, comprising:

interpolation means for generating complementary color signals for each pixel position of the image pickup element by interpolation based on signals of pixels which surround said each pixel position of the image pickup element;

RGB matrix means for generating RGB signals from the complementary color signals interpolated by said interpolation means;

suppression means for suppressing the RGB signals generated by said RGB matrix means, if a level of a luminance signal is not lower than a first predetermined level and/or is lower than a second predetermined level; and

color-difference matrix means for generating color-difference signals from the RGB signals suppressed by said suppression means.

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6. A signal processing apparatus according to claim 5, further comprising gamma correction means provided between said suppression means and said color-difference matrix means, for performing gamma correction on the RGB signals outputted from said suppression means.

7. A signal processing apparatus according to claim 5, further comprising luminance signal correcting means for correcting the luminance signal on the basis of the RGB signals suppressed by said suppression means.

8. A signal processing apparatus according to claim 7, wherein said luminance signal correcting means corrects the luminance signal before the luminance signal is gamma-corrected.

9. A signal processing apparatus which processes a signal outputted from an image pickup element having complementary color filters, comprising:

interpolation means for generating complementary color signals for each pixel position of the image pickup element by interpolation based on signals of pixels which surround said each pixel position of the image pickup element;

suppression means for suppressing the complementary color signals interpolated by said interpolation means, if a level of a luminance signal is not lower than a first predetermined level and/or is lower than

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a second predetermined level; and

RGB matrix means for generating RGB signals from the complementary color signals suppressed by said suppression means.

10. A signal processing apparatus according to claim 9, further comprising luminance signal correcting means for correcting the luminance signal on the basis of the complementary color signals suppressed by said suppression means.

11. A signal processing apparatus according to claim 10, wherein said luminance signal correcting means corrects the luminance signal before the luminance signal is gamma-corrected.

12. A signal processing apparatus which processes a signal outputted from an image pickup element having filters arranged to use plural kinds of colors, comprising:

interpolation means for generating complementary color signals for each pixel position of the image pickup element by interpolation based on signals of pixels which surround said each pixel position of the image pickup element; and

suppression means provided in front of said interpolation means, for suppressing a color signal outputted from the image pickup means, if a level of a luminance signal is not lower than a first predetermined

level and/or is lower than a second predetermined level.

13. A signal processing apparatus according to claim 12, further comprising luminance signal correcting means for correcting the luminance signal on the basis of the color signal suppressed by said suppression means.

14. A signal processing apparatus according to claim 13, wherein said luminance signal correcting means corrects the luminance signal before the luminance signal is gamma-corrected.

15. A signal processing method which processes a signal outputted from an image pickup element having filters arranged to use plural kinds of colors, comprising:

an interpolation step of generating a plurality of color signals for each pixel position of the image pickup element by interpolation based on signals of pixels which surround said each pixel position of the image pickup element;

a suppression step of suppressing the plurality of color signals generated by said interpolation step, if a level of a luminance signal is not lower than a first predetermined level and/or is lower than a second predetermined level; and

a color-difference matrix step of generating color-difference signals from the plurality of color signals suppressed by said suppression step.

16. A signal processing method according to claim 15, further comprising a gamma correction step provided between said suppression step and said color-difference matrix step, of performing gamma correction on the plurality of color signals suppressed by said suppression step.

17. A signal processing method according to claim 15, further comprising a luminance signal correcting step of correcting the luminance signal on the basis of the plurality of color signals suppressed by said suppression step.

18. A signal processing method according to claim 17, wherein said luminance signal correcting step corrects the luminance signal before the luminance signal is gamma-corrected.

19. A signal processing method which processes a signal outputted from an image pickup element having complementary color filters, comprising:

an interpolation step of generating complementary color signals for each pixel position of the image pickup element by interpolation based on signals of pixels which surround said each pixel position of the image pickup element;

an RGB matrix step of generating RGB signals from the complementary color signals interpolated by said

interpolation step;

a suppression step of suppressing the RGB signals generated by said RGB matrix step, if a level of a luminance signal is not lower than a first predetermined level and/or is lower than a second predetermined level; and

a color-difference matrix step of generating color-difference signals from the RGB signals suppressed by said suppression step.

20. A signal processing method according to claim 19, further comprising a gamma correction step provided between said suppression step and said color-difference matrix step, of performing gamma correction on the RGB signals suppressed by said suppression step.

21. A signal processing method according to claim 19, further comprising a luminance signal correcting step of correcting the luminance signal on the basis of the RGB signals suppressed by said suppression step.

22. A signal processing method according to claim 21, wherein said luminance signal correcting step corrects the luminance signal before the luminance signal is gamma-corrected.

23. A signal processing method which processes a signal outputted from an image pickup element having complementary color filters, comprising:

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an interpolation step of generating complementary color signals for each pixel position of the image pickup element by interpolation based on signals of pixels which surround said each pixel position of the image pickup element;

a suppression step of suppressing the complementary color signals interpolated by said interpolation step, if a level of a luminance signal is not lower than a first predetermined level and/or is lower than a second predetermined level; and

an RGB matrix step of generating RGB signals from the complementary color signals suppressed by said suppression step.

24. A signal processing method according to claim 23, further comprising a luminance signal correcting step of correcting the luminance signal on the basis of the complementary color signals suppressed by said suppression step.

25. A signal processing method according to claim 24, wherein said luminance signal correcting step corrects the luminance signal before the luminance signal is gamma-corrected.

26. A signal processing method which processes a signal outputted from an image pickup element having filters arranged to use plural kinds of colors, comprising:

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an interpolation step of generating complementary color signals for each pixel position of the image pickup element by interpolation based on signals of pixels which surround said each pixel position of the image pickup element; and

a suppression step provided in front of said interpolation step, of suppressing a color signal outputted from the image pickup means, if a level of a luminance signal is not lower than a first predetermined level and/or is lower than a second predetermined level.

27. A signal processing method according to claim 26, further comprising a luminance signal correcting step of correcting the luminance signal on the basis of the color signal suppressed by said suppression step.

28. A signal processing method according to claim 27, wherein said luminance signal correcting step corrects the luminance signal before the luminance signal is gamma-corrected.